

The impact of COVID-19 on small business owners: Evidence from the first 3 months after widespread social-distancing restrictions

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Abstract

Social-distancing restrictions and health- and economic-driven demand shifts from COVID-19 are expected to shutter many small businesses and entrepreneurial ventures, but there is very little early evidence on impacts. This paper provides the first analysis of impacts of the pandemic on the number of active small businesses in the United States using nationally representative data from the April 2020 Current Population Survey—the first month fully capturing early effects. The number of active business owners in the United States plummeted by 3.3 million or 22% over the crucial 2-month window from February to April 2020. The drop in active business owners was the largest on record, and losses to business activity were felt across nearly all industries. African-American businesses were hit especially hard experiencing a 41% drop in business activity. Latinx business owner activity fell by 32%, and Asian business owner activity dropped by 26%. Simulations indicate that industry compositions partly placed these groups at a higher risk of business activity losses. Immigrant business owners experienced substantial losses in business activity of 36%. Female business owners were also disproportionately affected (25% drop in business activity). Continuing the analysis in May and June, the number of active business owners remained low—down by 15% and 8%, respectively. The continued losses in May and June, and partial rebounds from April were felt across all demographic groups and most industries. These findings of early-stage losses to small business activity have important implications for policy, income losses, and future economic inequality.

1 | INTRODUCTION

The widespread closing of stores and businesses in the United States and around the world due to the coronavirus is unprecedented. Stores, factories, and many other businesses have closed by policy mandate, downward demand shifts, health concerns, or other factors. Many of these closures may be permanent because of the inability of owners to pay ongoing expenses and survive the shutdown. The impact on small businesses around the world is likely to be severe.

The early effects of COVID-19 on small business and entrepreneurs are not well known because of the lack of timely business-level data released by the government. This paper addresses this limitation by creating estimates of the number of business owners from monthly Current Population Survey (CPS) microdata files. Using these timely data,

I examine how COVID-19 impacted small business owners in mid-April 2020—the first month to capture the widespread shelter-in-place restrictions in the United States. I then expand the analysis to include the next 2 months as many states that had restrictions started to relax those restrictions.

The CPS data are used by the Bureau of Labor Statistics (BLS) to track unemployment rates, and have been used in previous research to study determinants of business ownership (e.g., recently, Fairlie & Fossen, 2019; Levine & Rubenstein, 2017; Wang, 2019). The CPS captures the current work activity of the business owner, and whether that business owner is currently operating the business. Thus, the number of *active* business owners can be captured in the data, but there is no way of telling whether these are temporary or permanent business closures. Many of the inactive business owners, however, are likely to permanently close their businesses especially if the COVID-19 induced recession is prolonged. Even temporary closures caused by the pandemic are problematic because they reflect income losses to business owners in those inactive months.

This study provides the first estimates of the early-stage effects of COVID-19 on small business owners from April 2020 CPS microdata.¹ I find that the number of working business owners plummeted from 15.0 million in February 2020 to 11.7 million in April 2020 because of COVID-19 mandates and health- and economic-driven demand shifts. The loss of 3.3 million active business owners (or 22%) was the largest drop on record. When conditioning on working roughly 2 or 4 days/week, the losses are even larger (28% and 31%, respectively). Total hours worked by all business owners dropped by 29%. Although incorporated businesses are more growth-oriented and stable, they experienced a drop of 20% from February to April 2020.

Patterns across gender, race, and immigrant status reveal alarming findings. African-Americans experienced the largest losses, eliminating 41% of active business owners. Latinx also experienced major losses with 32% of business owners halting activity between February and April 2020. Immigrant business owners suffered a large drop of 36% in business activity, and female business owners suffered a disproportionate drop of 25%.

Building on these findings, this paper extends the analysis of COVID-19 impacts into the second and third months following widespread shelter-in-place restrictions across the country—May and June 2020. The analysis answers the question of whether there was further closing of small businesses or instead a partial rebound as small business owners tried to reopen or partially reopen. The findings indicate that there was a partial rebound from April 2020 numbers in May and an additional rebound in June. The number of active business owners bounced back by 7 percentage points resulting in a 15% drop in business activity from February to May 2020, and an additional 5 percentage points rebound in June resulting in an 8% drop in business activity from February to June 2020.

Patterns across gender, race, and immigrant status reveal that the disproportionate impacts from COVID-19 lingered into May and June. African-Americans continued to experience the largest losses, eliminating 26% of active business owners in May and 19% in June. Latinx also experienced major losses with 19% of business owners inactive in May and 10% inactive in June. Immigrant business owners suffered a large drop in business activity of 25% in May and 18% in June.

Most major industries faced large drops in the number of active business owners in April with the only exception being agriculture. Construction, restaurants, hotels, transportation, and personal/laundry services all faced large declines in the number of active business owners due to COVID-19. Simulations reveal that the concentrations of female, black, Latinx, and Asian businesses in industries hit hard by the pandemic contributed to why losses in business activity were higher for these groups than the national average loss in April. May and June brought a partial rebound for most industries.

Overall, these first estimates of impacts of COVID-19 on small businesses from the April 2020 CPS indicate that losses were spread across demographic groups and types of business—no group was immune to negative impacts of social-distancing policy mandates and demand shifts. But, they also reveal a partial bounce back for all groups. Although there is no way to know at this time if these business closures will be permanent each month of inactivity has an impact on the revenues, profits, and employees of these businesses.

These results build on the findings from a few related studies of the early effects of the coronavirus on small businesses in the United States.² Employer business applications as measured by the U.S. Census weekly Business

¹The findings for April 2020 were initially released as a working paper in early May (Fairlie, 2020) and were covered widely in the press and news (e.g., Washington Post, NY Times, WSJ, PBS, CNBC, and BBC). The findings were also used in testimony to the U.S. Senate (Evans, 2020), Busby (2020), a new Senate Bill (U.S. Senate, 2020), arguments for the shop at black-owned businesses movement, and other policies.

²Estimates for Canada show a decrease in business ownership between February 2020 and May 2020 of 15% and 10% for incorporated and unincorporated businesses, respectively (Beland, Fakorede, & Mikola, 2020).



Formation Statistics (BFS) fell in the 5 weeks from mid-March to mid-April by over 27% relative to the previous year (Wilmoth, 2020). Examining more recent data from the BFS there is some evidence of a bounce back, but weekly estimates show a lot of variation (U.S. Census Bureau, 2020). Estimates from the weekly U.S. Census Small Business Pulse Survey indicate that roughly 50% of businesses report having a large negative effect from the COVID-19 pandemic and that only 15%–20% of businesses have enough cash on hand to cover 3 months of operations (Bohn, Mejia, & Lafortune, 2020; U.S. Census Bureau, 2020). Another weekly survey indicates that decreased demand is more problematic than supply factors, such as accessing materials and goods (Desai & Looze, 2020). Bartik et al. (2020) conducted a survey in late March of nearly 6,000 small businesses that were members of the Alignable business network. They find that 43% of businesses is temporarily closed, large reductions in employees, and the majority of businesses has <1 month of cash on hand. The Stanford Latino Entrepreneurship Initiative (2020) surveyed 224 high-revenue Latinx-owned businesses and found that 86% of respondents reported immediate negative effects, such as delayed projects and closure from the pandemic. This paper builds on the previous work by focusing on early-stage effects in April–June using CPS data, and by exploring differential effects for female, minority, and immigrant business owners, which is potentially important for targeting government aid to preserve small businesses and the jobs they create.³

2 | DATA

2.1 | Current Population Survey

Although research on small businesses and entrepreneurship is growing rapidly, there are very few national data sets that provide information on ownership with additional information on demographic characteristics of the owners. Using microdata from the basic monthly files of the CPSs, I measure self-employed business ownership at the individual owner level. These surveys, conducted monthly by the US Bureau of the Census and the US BLS, are representative of the entire US population and contain observations for more than 130,000 people.

The CPS has been conducted monthly since 1940 and is the underlying source of official government statistics on employment and unemployment. Data are collected by personal interviews. The data cover all persons in the civilian noninstitutionalized population of the United States living in households. The CPS is the only source of monthly estimates of employment, self-employed persons, wage and salary employees, and unemployment. Although the main purpose of the CPS is to collect information on the employment situation, a secondary purpose is to collect information on the demographics of the population.

Measures of business ownership are available from only a handful of other large, nationally representative government data sets, such as the Survey of Business Owners (SBO), Census PUMS files, and the American Community Survey (ACS). Measures of business ownership based on these cross-sectional data, however, cannot capture recent patterns because there is often a 1–2-year delay in release. The CPS releases microdata within a month of the survey week.

To estimate business ownership in the CPS data, I identify all individuals who own a business as their main job in the survey month (based on the class of worker question and monthly labor force recode). The main job is defined as the one with the most hours worked during the survey week. Thus, individuals who start side businesses will not be counted if they are working more hours on a wage and salary job. The CPS captures the current work activity of the business owner, and whether that business owner is currently operating the business. Thus, the number of *active* business owners can be captured in the data, but there is no way of telling whether these are temporary or permanent business closures. But, inactive business owners regardless of whether the business is temporary or permanently closed are suffering losses in business income during those months of nonoperation.

The measure of business ownership in the CPS captures all business owners including those who own incorporated or unincorporated businesses, and those who are employers or nonemployers. Although some business owners own large businesses the predominate types are small businesses. I interpret the data as predominately covering small business owners. In addition to providing information on business ownership and current activity, the CPS data include

³Large literatures explore the causes and consequences of disparities in ownership and success of minority-, female-, and immigrant-owned businesses. For broader discussions and reviews of these literatures, see, for example, Dávila and Mora (2013), Fairlie and Robb (2008), Jennings and Brush (2013), Fairlie and Lofstrom (2015), Kerr and Kerr (2020), and Parker (2018).

information on detailed demographic information, including gender, race, and immigrant status of the owner. The data also include information on the industry and incorporation status of the business. The CPS data have been used in previous research to study self-employment, business ownership, and entrepreneurship (e.g., see, Chatterji, Chay, & Fairlie, 2014; Fairlie & Chatterji, 2013; Fairlie & Fossen, 2019; Hipple & Hammond, 2010; Levine & Rubenstein, 2017; Wang, 2019).

2.2 | Survey timing and social-distancing restrictions

The CPS survey reference period is generally the calendar week that contains the 12th day of the month. The CPS survey reference period is generally the calendar week that contains the 12th day of the month. For April, the week was Sunday, April 12 through Saturday, April 18. The March survey reference week was March 8 through March 14. For May, the week was Sunday, May 10 through Saturday, May 16, and for June, the week was Sunday, June 14 to Saturday, June 20. Given that shelter-in-place restrictions started after this reference week, the April 2020 release is the first CPS survey fully covering the early-stage impacts of COVID-19. On March 16, 2020 San Francisco Bay Area imposed shelter-in-place restrictions followed by the State of California on March 19. New York State followed the next day. By early April most states imposed social-distancing restrictions. The analysis below mostly relies on comparisons between February 2020 (before social-distancing policy mandates) and April, May, or June 2020 (the first 3 months after policy mandates).⁴

3 | RESULTS

3.1 | Number of business owners

I first examine small business ownership patterns over time to determine the impacts of COVID-19. Long-term trends in the number of business owners are displayed in Figure 1 (and recent months in Table 1). The number of business owners actively working any amount is displayed in Figure 1. Over the past two decades, the number of active business owners in the United States has shown a relatively smooth pattern over time with a slight upward trend. What is clear, however, is the dramatic drop in the number of active business owners in April 2020 and the partial rebound in May and continuing rebound in June. The number of working business owners dropped from 15.0 million in February 2020 to 11.7 million in April 2020 because of COVID-19. March 2020 only shows a small drop in business owners likely because of the limited effect from shelter-in-place restrictions. May 2020 shows a partial rebound from April 2020 adding back 1.1 million active business owners (7 percentage points relative to February levels). The losses due to COVID-19 from February remain high at 15%, but the rebound suggests that not all of the losses of active business owners in April 2020 were permanent closures. June experienced a further rebound with business activity being down 8% from February levels.

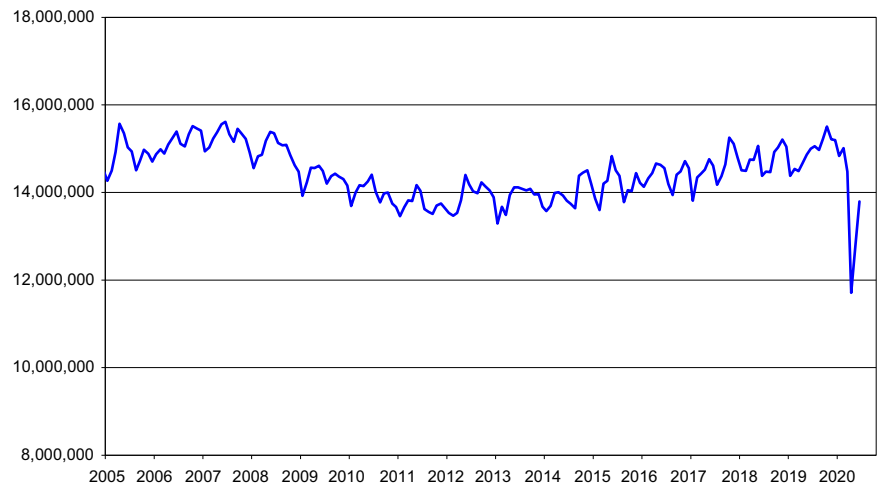
The loss of 3.3 million active business owners (or 22%) from February to April 2020 was the largest drop on record. When conditioning on working at least 15 hr in the survey week, the losses were even larger. The choice of 15 hr is made to approximate 2 days/week and accommodate lumpy hours reporting (i.e., often 10, 15, 20, etc.). There were 13.6 million business owners working 15+ hours in February 2020 and only 9.8 million in April 2020. The drop of 3.8 million business owners or 28% was unprecedented. Conditioning on 30 or more hours worked results in losses of 3.4 million or 31% (see Table 1). The losses conditioning on hours worked were also larger in May relative to February (19% for 15+ hours and 21% for 30+ hours). Both measures, however, show partial rebounds in May from April 2020. From 9 to 10 percentage points of the drops in active business owners were added back in May. Further rebounds occurred in June with losses to 15+ hours worked business activity at 11% and 30+ hours worked business activity at 13%.

Table 1 also reports the total number of hours worked in the survey week among all business owners by month. Figures are reported in 1,000 s. From February to March there was a drop in total hours worked in businesses by owners of 29%. From February to May there was also a drop in total hours worked by business owners, but the drop was not as large at 20%. From February to June total hours worked dropped by 12%. These reductions in business hours worked

⁴In most analyses March 2020 is not included because of partial effects. On March 11, the World Health Organization (WHO) declared COVID-19 a pandemic which might have resulted in early demand shifts over health concerns predating shelter-in-place restriction policies.



FIGURE 1 Number of active business owners in the United States (January 2000–June 2020) [Color figure can be viewed at wileyonlinelibrary.com]



have important ramifications for take home earnings for business owners. Business owners are likely to have experienced large reductions in income. Unfortunately, the CPS data do not provide information on these losses to income. The latest data available from the Census on business revenues indicate that average sales and receipts of businesses are \$440,000/year (U.S. Census Bureau, 2016).

Separating the number of business owners into unincorporated and incorporated status indicates large drops in activity for both groups (see Table 1). Incorporated businesses are viewed as more growth-oriented, committed, procyclical, and entrepreneurial (e.g., Fairlie, Miranda, & Zolas, 2020; Levine & Rubinstein, 2017, 2018). The number of active unincorporated business owners dropped 28% from February to April but then rebounded 10 percentage points in May and a further 9 percentage points in June. Incorporated business owners realized a smaller drop in active business owners of 14% from February to April, and a smaller rebound of 3 percentage points in both May and June. The losses remain large, however, with 17% of unincorporated business owners and 11% of incorporated business owners not operating in May, and 9% of unincorporated and 7% of incorporated not operating in June.

3.2 | Demographic patterns

The CPS data provide detailed information on gender, race, and immigrant status. Figure 2 (Table 2) displays the number of active female and male business owners in February, April, May, and June 2020. Female businesses were especially hit hard by COVID-19 in April. The number of active female business owners dropped from 5.4 million to 4.0 million in the crucial 2-month window. The decline of one-fourth of active female business owners is unprecedented.

TABLE 1 Number of active business owners before and after COVID-19

	Worked in survey week	Percent change from Feb. 2020	Worked 15+ hours	Worked 30+ hours	Total hours worked in business (000 s)	Unincorporated	Incorporated
June 2020	13,794,081	−8	12,021,520	9,614,237	490,842	8,065,557	5,728,523
May 2020	12,809,946	−15	11,040,149	8,808,505	448,786	7,292,477	5,517,469
April 2020	11,710,360	−22	9,821,255	7,684,501	394,678	6,392,480	5,317,880
March 2020	14,475,704	−4	12,803,107	10,392,909	523,558	8,545,156	5,930,548
February 2020	15,012,692	0	13,582,876	11,086,054	558,440	8,828,513	6,184,179
January 2020	14,832,717	−1	13,293,991	11,093,877	551,153	8,649,659	6,183,059

Notes: Estimates form Current Population Survey (CPS) microdata. Monthly sample sizes are roughly 55,000 for the labor force and 5,000 for business owners.

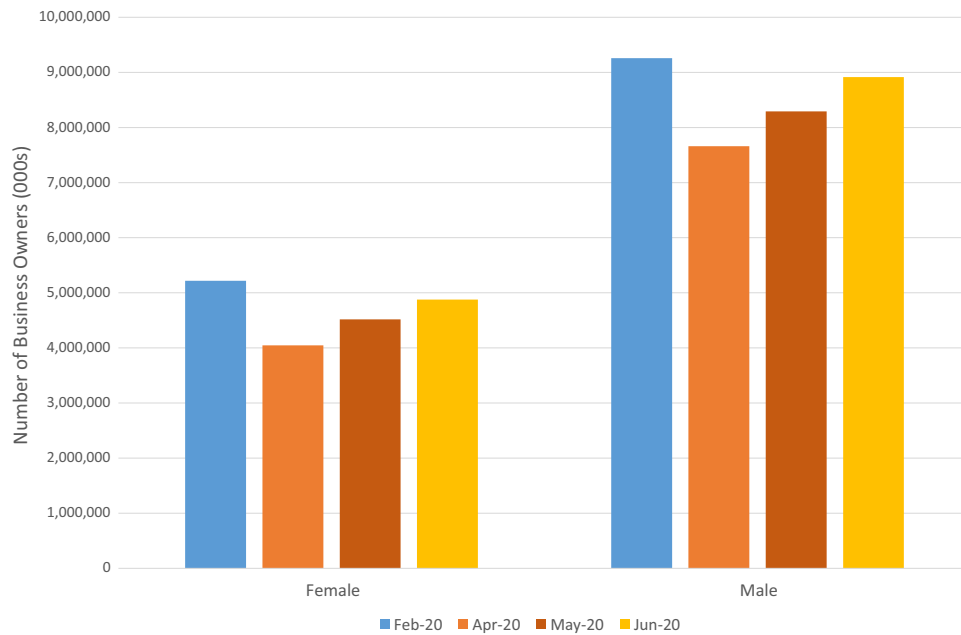


FIGURE 2 Number of active business owners by gender before and after COVID-19 [Color figure can be viewed at wileyonlinelibrary.com]

Male business owners also suffered major losses in business activity with a reduction of 2 million representing 20% of previous levels.

Continuing into May, both male and female business owners were hit hard by COVID-19 relative to February levels, before the social-distancing restrictions. The number of active female business owners dropped from 5.4 million to 4.5 million (16%), and the number of active male business owners dropped from 9.6 million to 8.3 million (14%). However, both female and male business owners bounced back from April losses. Female business owners bounced back resuming work by 9 percentage points and male business owners bounced back by 7 percentage points. In June, the rebound for both female and male owners continued. The number of active business owners was down by 10% for women and 7% for men relative to pre-COVID levels.

In terms of the share of total active business owners, female business owners only experienced a slight loss in shares. Table 3 reports estimates of the share of total business owners represented by each demographic group. The female share of active business owners was 36% in February and declined slightly to 35% in April–June.

TABLE 2 Number of active business owners by demographic group

Group	Feb. 2020	Apr. 2020	May 2020	June 2020	Feb.–Apr. change		Feb.–May	Feb.–June
	Number	Number	Number	Number	Number	Percent	Percent	Percent
Total	15,012,692	11,710,360	12,809,946	13,794,081	–3,302,331	–22	–15	–8
Female	5,389,399	4,048,205	4,517,965	4,876,392	–1,341,194	–25	–16	–10
Male	9,623,293	7,662,156	8,291,981	8,917,689	–1,961,137	–20	–14	–7
Black	1,079,116	637,769	798,668	872,717	–441,347	–41	–26	–19
Latinx	2,070,896	1,412,925	1,668,254	1,855,026	–657,971	–32	–19	–10
Asian	888,528	657,896	700,393	798,811	–230,632	–26	–21	–10
White	10,553,415	8,761,531	9,373,304	10,001,462	–1,791,884	–17	–11	–5
Immigrant	3,120,275	2,009,597	2,329,820	2,545,926	–1,110,677	–36	–25	–18
Native	11,892,417	9,700,763	10,480,126	11,248,155	–2,191,654	–18	–12	–5

Note: Estimates are from Current Population Survey (CPS) microdata.

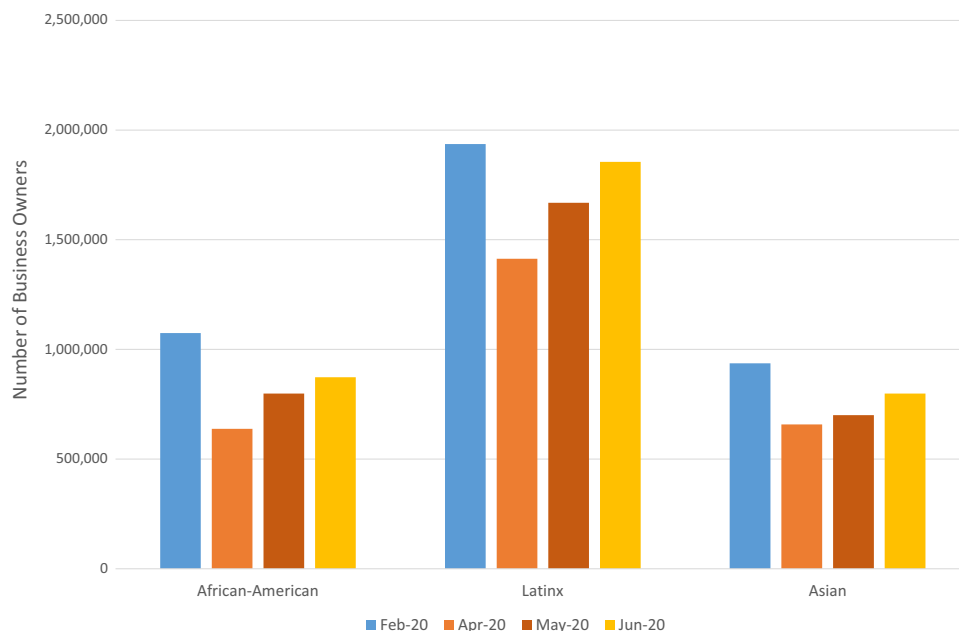
TABLE 3 Share of active business owners by demographic group

Group	Feb. 2020 Share (%)	Apr. 2020 Share (%)	May 2020 Share (%)	June 2020 Share (%)
Total	100	100	100	100
Female	36	35	35	35
Male	64	65	65	65
Black	7	5	6	6
Latinx	14	12	13	13
Asian	6	6	5	6
White	70	75	73	73
Immigrant	21	17	18	18
Native	79	83	82	82

Note: Estimates are from Current Population Survey (CPS) microdata.

Turning to racial patterns, Figure 3 (Table 2) displays the number of active business owners by major racial groups. The findings are alarming. The number of African-American business owners plummeted from 1.1 million in February 2020 to 640,000 in April. The drop of 440,000 black business owners actively working in their businesses, representing 41% of the previous level, is disconcerting. Although there was a partial rebound, the number of actively working African-American business owners remains 26% lower in May than that in February 2020, which is the largest drop for any major racial/ethnic group. The implications for lost income from having 41% of business owners not working in April, 26% not operating in May, and 19% not operating in June will have longer-term negative consequences on savings and wealth. Average business sales and receipts among black-owned businesses are \$58,000/year (U.S. Census Bureau, 2016).

Latinx business owners also suffered major losses in business activity. The number of active Latinx business owners dropped from 2.1 million to 1.4 million (32%) from February to March. These losses in business activity from COVID-19 continued into the second and third months after widespread shelter-in-place restrictions. The number of active Latinx business owners dropped by 19% from February to May and 10% from February to June. Although there was a partial

**FIGURE 3** Number of active business owners by race/ethnicity before and after COVID-19 [Color figure can be viewed at wileyonlinelibrary.com]

rebound from April, these losses continue to be large and contribute to lost income for owners. Average business sales and receipts among Hispanic-owned businesses are \$143,000/year (U.S. Census Bureau, 2016).

Asian business owners suffered losses in business activity of 230,000 representing 26% of February levels. Even with the rebounds in May and June, the number of Asian business owners who were actively running their businesses dropped by 21% and 10%, respectively. Consumer discrimination against Asian-owned businesses was a concern because of the coronavirus first appearance in China (CDC, 2020a). The losses to revenues among Asian business owners are large with average sales and receipts of \$365,000 (U.S. Census Bureau, 2016).

The drop in business activity from February to April for whites were also large at 1.8 million business owners, but smaller as a percentage of starting levels (17%). White business owners experienced declines in operating businesses of 11% in May and 5% in June. Average sales and receipts of white-owned businesses are \$546,000 (U.S. Census Bureau, 2016).

The black and Latinx business owner shares declined from February to April by two percentage points (Table 3). Blacks represented 5% of active business owners in the nation in April and Latinx represented 12% of active business owners. The share bounced back but only partially by June (6% for blacks and 13% for Latinx). The Asian share remained relatively stable over the 4 months, whereas the white share of total business owners increased.

Focusing on immigrants, the number of active business owners dropped from 3.1 million to 2.0 million from February to April (Figure 4 and Table 2). The loss of over 1 million active immigrant business owners is alarming. It represents a drop of 36% from February levels. The losses in business activity continue to be large for immigrants with a 25% reduction in May and an 18% reduction in June. Although active business owner numbers partially bounced back in May and June relative to April for immigrants the levels did not return to anything close to pre-COVID-19 levels. For comparison, the number of active US born (native) business owners dropped by much lower levels during the first 3 months (18% in April, 12% in May, and 5% in June). These patterns led to the share of immigrant business owners dropping from 21% in February to 17%–18% in April–June (Table 3).

Comparing back to April 2019 levels, the conclusions do not differ. For all of the demographic groups, the number of business owners dropped precipitously from April 2019 to April 2020. In general, the number of self-employed business owners for each group does not change substantially over time especially during stable economic conditions, and thus February 2020 is an accurately captures previous levels. April 2020 is clearly an unprecedented shock to business owners that hit all groups hard throwing active business totals off relatively stable longer-term levels.

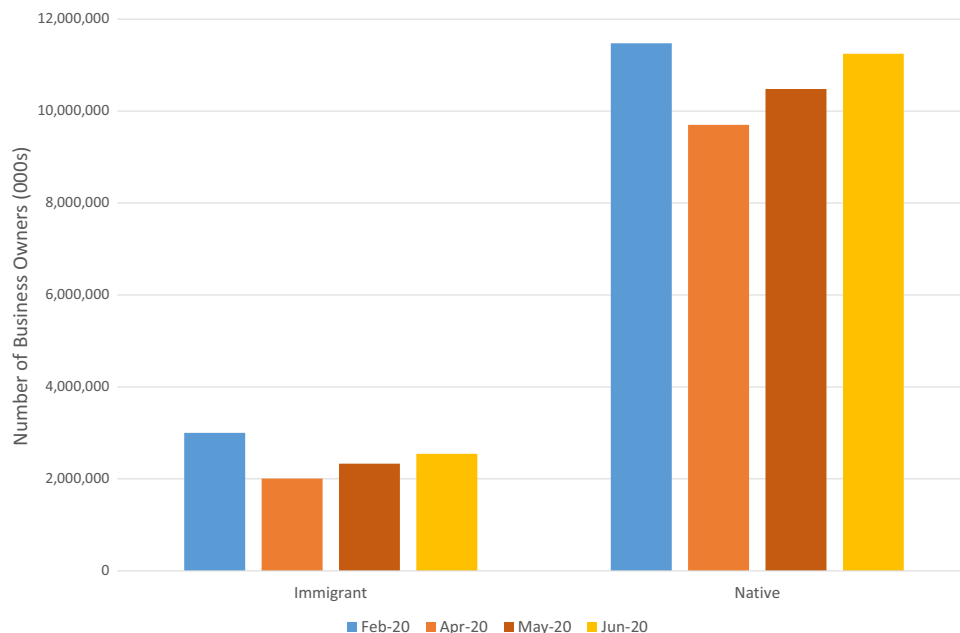


FIGURE 4 Number of active business owners by nativity before and after COVID-19 [Color figure can be viewed at wileyonlinelibrary.com]

**TABLE 4** Number of active business owners by industry

Industry	February 2020		Changes in number		
	Number	Percent	Feb.–April (%)	Feb.–May (%)	Feb.–June (%)
Agriculture	869,661	6	7	16	14
Construction	2,436,057	16	–27	–19	–8
Manufacturing	566,192	4	–11	–26	–2
Wholesale trade	260,151	2	–14	1	5
Retail trade	1,068,484	7	–10	–2	–1
Transportation	798,325	5	–22	–12	–1
Information	235,847	2	–10	–19	–20
Financial activities	1,301,769	9	–12	–6	–1
Professional and business services	3,295,875	22	–18	–10	–7
Educational services	329,544	2	–39	–10	–25
Health services	1,238,335	8	–16	–18	–8
Arts, leisure, hotels	685,009	5	–35	–35	–31
Restaurants	409,605	3	–22	–24	–13
Repair and maintenance	512,403	3	–25	–22	–29
Personal and laundry services	926,409	6	–79	–48	–26
"Nonessential" industry	3,675,939	24	–38	–28	–17
"Essential" industry	11,336,752	76	–17	–10	–5

Notes: Estimates from Current Population Survey (CPS) microdata. Essential industries are defined using the classification provided by Delaware State for essential and nonessential businesses.

3.3 | Industry patterns

Table 4 reports estimates by major industry groups. Almost every industry experienced sizeable drops in the number of active business owners from February to April. The only exception was Agriculture for which the number of active business owners increased slightly.⁵ Construction which is one of the largest industries for business ownership experienced a major decline of nearly 670,000 (27%) active business owners in the United States from February to April. Although Construction partially bounced back in May and June losses in business activity continued to be large. Although construction businesses experience a lot of swings in demand, it is not clear how many of these business owners will be able to come back over the next several months.

Store fronts across the country had been closed due to COVID-19 mandated restrictions especially in April. Retail trade showed a decline of 108,000 business owners in April representing 10% of February 2020 levels. Active business owners in Retail Trade are only slightly down, however, in May and June. Restaurants experienced a decline of 22% in April even though many of those remaining open turned to take-out or delivery services. The sector has experienced continuing low levels of business activity over the next 2 months. The broad sector of Arts, Leisure, and Accommodations was hit especially hard losing 35% of active business owners in April and essentially no rebound in May or June.

Both high- and less-skilled services were hit hard by COVID-19. Personal and Laundry Services were especially hard hit with losses of 79% of business owner activity in April and continuing losses of 48% in May and 26% in June. Transportation services which includes taxi and some uber drivers dropped by 22% in April, but partially rebounded in subsequent months. Higher-skilled services, such as Financial Activities and Professional and Business Services, lost

⁵Although farmers and other agricultural business owners might have continued to work during the pandemic they might have experienced large losses in sales and revenues due to supply chain shutdowns from the closing of regular buyers (e.g., schools and restaurants).

12% and 18%, respectively. Even health services experienced a drop of 16%. All three experienced partial rebounds in May and June.

It is also possible to categorize industries into essential versus nonessential according to state or local government guidelines, although there is a lot of variation across these guidelines in terms of specific industries. Delaware State provides the most detailed and comprehensive list of essential businesses at the 4-digit industry level and follows the same 4-digit industry codes as the CPS (North American Industry Classification System, NAICS).⁶ The classification is likely to be imperfect, however, because definitions, enforcement, business owner compliance, and health- and economic-related consumer reactions vary across the country. Using this categorization, “essential” industries comprise 76% of business owners. Losses in the number of active business owners are lower for essential industries at 17% in April compared with 38% among nonessential industries (as expected). Although both groups of business owners experienced partial rebounds, the number of active business owners in essential industries was down by 10% in May and 5% in June, and the number in nonessential industries was down by 28% in May and 17% in June.

3.3.1 | Importance of industry distributions

Did the industry distribution of businesses owned by different demographic groups place them at a higher or lower risk of COVID related shutdowns? To explore this question I simulate the total number of business owners for each demographic group by switching their industry distribution for the US national industry distribution. The industry distributions are both measured in February 2020. The expression for the simulated change in the number of business owners for group j from February to April is

$$\sum_{i=1}^K S_i^{\text{US}} (N_i^{j,\text{Apr}} - N_i^{j,\text{Feb}}), \quad (1)$$

where S_i^{US} is the share of all business owners represented by major industry i using the US national industry distribution, and $N_i^{j,\text{Month}}$ is the number of business owner for group j , industry i , and the defined month. The simulation essentially uses the national industry shares and multiplies them by the group-specific changes in the number of active business owners between the 2 months.

Table 5 reports estimates from the simulations. The number of active female business owners declined by 25% from February to April 2020. The industry distribution of female business owners was partly responsible for relatively large business activity losses from February to April. When switching to the US national industry distribution the decline in active business owners is lower at 19%. Thus, the female industry distribution was “unfavorable” in terms of placing them at a higher risk of business activity losses in April 2020. A similar finding holds for May and June. For both months, the drop in active business owners is smaller for women when switching to the US national industry distribution.

By definition, the opposite is true for male business owners. Relative to the US total (and thus female business owners), the male industry distribution partly protected them from larger losses due to COVID-19. Switching industry distributions to the national distribution results in a higher predicted decline in business owner activity of 23% in April, 15% in May, and 8% in June.

The industry distribution of black business owners placed them at a higher risk of business activity losses due to COVID-19. The percent change in the number of active black business owners becomes considerably smaller when simulations are run with the national industry distribution. The change is from a loss of 41% to 35% in April. The patterns are similar in May and less pronounced in June.

A similar pattern is found for Latinx. When switching the Latinx industry distribution to the US national industry distribution the predicted number of active Latinx business owners drops from 32% to 28% for April. Latinx business owners had an “unfavorable” industry distribution partly placing them at higher risk of business activity losses. For May and June, the “unfavorable” industry distribution also placed Latinx business owners at a higher risk of business activity losses.

⁶Delaware's list can be accessed at “List of Delaware Business Categories that are Essential and Non-Essential (March 22, 2020),” <https://coronavirus.delaware.gov/resources-for-businesses/>.

**TABLE 5** Simulations of changes in number of active business owners from switching industry distributions

Group	Actual change			Predicted using national industry distribution		
	Feb.–Apr. (%)	Feb.–May (%)	Feb.–June (%)	Feb.–Apr. (%)	Feb.–May (%)	Feb.–June (%)
Total	–22	–15	–8	–22	–15	–8
Female	–25	–16	–10	–19	–10	–4
Male	–20	–14	–7	–23	–15	–8
Black	–41	–26	–19	–35	–18	–17
Latinx	–32	–19	–10	–28	–13	–6
Asian	–26	–21	–10	–22	–27	–21
White	–17	–11	–5	–18	–12	–6
Immigrant	–36	–25	–18	–35	–19	–17
Native	–18	–12	–5	–19	–12	–6

Notes: Estimates are from Current Population Survey (CPS) microdata. Predicted changes switch the group's industry distribution for the US industry distribution but continue to use the group's percent change between the 2 months.

Asian business owners show a similar pattern in April, but not in May and June. For April, I also find that Asian business owners were more concentrated in industries placing them at a higher risk of losses in business activity. But, when switching to the national industry distribution in May and June Asian business owners are predicted to have larger losses in business activity, which implies the opposite pattern. In these months, business activity losses switched to industries that Asian business owners were less concentrated.

Interestingly, the large loss in the number of immigrant business owners does not appear to be due to a less favorable industry distribution. The loss of 36% of active immigrant business owners remains essentially unchanged when switching to the national industry distribution in April. The same pattern is found in June. For May there is some evidence of a less favorable industry distribution based on the losses in business activity in that month relative to February.

Another way to estimate industry impacts is to examine the percentage of each demographic group that is in “essential” industries. As noted above the classification is not perfect and other factors, such as differences in customer demand, enforcement, and compliance by businesses also influence whether they are open. The percentage of black business owners in essential industries is 66% which is lower than the national percentage of 76%, and consistent with the less “favorable” industry distribution placing them at higher risk of losses due to COVID-19. Similarly, female-owned businesses are less concentrated in essential businesses at 61%. On the other hand, using the Delaware codes, Latinx and immigrant business owners are slightly more likely to be concentrated in essential industries (79%–80%), and Asian business owners have the same concentration in essential industries as the national average (76%). The classification is likely to be imperfect and does not line up entirely well with patterns of group-specific losses.

4 | CONCLUSIONS

The first estimates of the effects of COVID-19 on the number of business owners from nationally representative April–June 2020 CPS data indicate dramatic early-stage reductions in small business activity. The number of active business owners in the United States plunged from 15.0 million to 11.7 million over the crucial 2-month window from February to April 2020. No other 1-, 2-, or even 12-month window of time has ever shown such a large change in business activity. For comparison, from the start to end of the Great Recession the number of active business owners decreased by 730,000 representing only a 5% reduction. In general, business ownership is relatively steady over the business cycle (Fairlie, 2013; Parker, 2018). The loss of 3.3 million active business owners (or 22%) was comprised of large drops in important subgroups, such as owners working roughly 2 days/week (28%), owners working 4 days/week (31%), and incorporated businesses (20%). When viewed as total hours worked by all business owners there was a drop of 29%.

Estimates from nationally representative May 2020 CPS data—the second month into social-distancing restrictions—continue to indicate large reductions in small business activity. The number of active business owners in the United States dropped by 15% from February to May. The number of business owners in May actually rebounded somewhat from the April low of 11.7 million. The partial rebound resulted in an increase of 1.1 million business owners or 7 percentage points from February levels. The rebound continued in June 2020 adding back another 7 percentage points. The decline in business owner activity from February to June is 8%. Although the rebound shows widespread reopening of small businesses, it continues to indicate an extremely large decrease in business activity over a short period of time. Importantly, the drops in business activity in April, May, and June represent large income losses to business owners that cannot be fully recovered.

African-American business owners were hit the hardest by COVID-19. The first estimates from April 2020 for black business owners in the United States indicate a massive drop of 41% in business activity. Black business owners were also disproportionately negatively affected in May and June relative to national levels with declines in business activity of 26% and 19%, respectively. Simulations indicate that the industry distribution of blacks was partly responsible, placing black business owners at greater risk of losses in business activity due to the pandemic. Latinx businesses were also hit hard by COVID-19 losing 32% of active business owners in April, 19% in May, and 10% in June. Asian business owners experienced a 26% decline in business activity over the critical 2-month window, and continued losses of activity of 21% in May and 10% in June. Simulation estimates also point to unfavorable industry distributions for Latinx, but the evidence is less clear for Asians. Immigrant business owners were also devastated with losses of 36% of business activity in April. Continued disproportionate losses were felt in May (25%) and June (18%). Although industry distributions placed some groups at higher risk of closures in the pandemic, differences in the scale of businesses are likely a major cause of disproportionate losses among minority-owned businesses, which are smaller on average (Fairlie & Robb, 2008; U.S. Census Bureau, 2016). Larger businesses are more likely to have the resources, business, and legal structure, and returns to scale to implement procedures to address social-distancing regulations for operating and reopening during the pandemic.

The negative early-stage impacts on minority- and immigrant-owned businesses, if prolonged, could be problematic for broader racial inequality because of the importance of small businesses for local job creation (disproportionately hiring other minorities), economic advancement, and longer-term wealth inequality (Boston, 1999, 2006; Bradford, 2003, 2014; Fairlie & Robb, 2008; Stoll, Raphael, & Holzer, 2001). With major losses in business activity in April and continued losses in May and June, even though these losses were smaller, business owners have already lost substantial amounts of income from their businesses. If a more complete rebound does not happen soon the long-term economic consequences could be severe. Many minority business owners will not have the resources to weather prolonged closures, reduced demand from health concerns, and a more comprehensive recession. The latest Census data indicate that the median level of wealth among black families is \$13,000 and Latinx families is \$20,000 compared with \$139,000 among white families (U.S. Census Bureau, 2015).

The first estimates of early-stage impacts on active female business owners are also worrisome. Female business ownership is substantially lower than male business ownership and female-owned businesses have lower revenues, employees, and profits on average (U.S. Census Bureau, 2016). The disproportionate losses in the first 3 months to the number of active female business owners will only further increase gender inequality in business ownership and perhaps broader economic inequality.

The next important question is whether the shutdowns of small businesses are temporary or permanent. The government has been responding to concerns over longer-term effects on small businesses through several programs. The largest program is the Paycheck Protection Program (PPP) which has thus far allocated over \$650 billion to help businesses. Another large program is the Economic Injury Disaster Loan program by the Small Business Administration, which provided over \$150 billion as of July 2020. Foundations and private companies are also starting to contribute to relief efforts. For example, Magic Johnson Enterprises is providing a \$100 million commitment to minority- and female-owned businesses left out of the PPP program. Another recent example, is that PayPal, in partnership with the Association for Enterprise Opportunity, created a \$10 million fund to help black-owned businesses, and Google is pledging \$175 million on financing and supporting black-owned businesses. Can these programs help small businesses survive the setbacks and shutdowns due to the coronavirus pandemic, or will more assistance be needed? More permanent mass closures of small businesses in the United States are likely to have a dramatic effect on employee job losses, further income inequality, and contributing to a prolonged recession. But, the tradeoffs from lifting restrictions on reopening of businesses on health impacts are unknown and of concern given that COVID-19 cases have been increasing over the summer (CDC, 2020b).

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DATA AVAILABILITY STATEMENT

The microdata used in the analysis are publicly available.

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